AMENDMENTS TO THE CLAIMS:

The below listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) An elongated intracorporeal optical instrument, comprising:

a. an elongated shaft having a longitudinal axis and proximal and distal portions having ends, the proximal portion having a substantially constant outer diameter, an optical pathway configured for passing optical radiation, and an internal surface having a proximal portion and defining an internal chamber within the elongated shaft extending to the optical pathway;

b. an elongated optical fiber extending substantially [[a]] an entire length of said internal chamber of said elongated shaft; and

c. a ferrule directly connected to said optical fiber and having a distal portion with a diameter and an outer surface, a proximal portion with a substantially constant outer diameter and an outer surface, the outer diameter being substantially the same as the outer diameter of the elongated shaft proximal portion, and configured to have a first position in which said ferrule is secured to the elongated shaft and a second position in which the ferrule is released from the elongated shaft and is free to rotate around said longitudinal axis.

2. (Previously presented) The optical instrument of claim 1 wherein the ferrule is configured to be secured to the elongated shaft by a friction fit.

3. (Previously presented) The optical instrument of claim 2, wherein said friction fit comprises contact between at least a portion of said ferrule outer surface and a portion of said elongated shaft inner surface.

4. (Previously presented) The elongated intracorporeal optical instrument of claim 1, wherein said intracorporeal instrument comprises an optical guidewire.

5. (Previously presented) The optical instrument of claim 2, wherein said ferrule distal outer surface comprises a surface selected from the group consisting of cylindrical surfaces, tapered surfaces, rounded surfaces, and combinations thereof.

6. (Previously presented) The optical instrument of claim 1, wherein said ferrule diameters are each less than about 0.01 inch.

7. (Previously presented) The optical instrument of claim 1, wherein said ferrule diameters are each less than about 0.006 inch.

8. (Previously presented) The optical instrument of claim 1, wherein said ferrule proximal portion is configured to form an operable optical connection with another optical instrument.

9. (Previously presented) The optical instrument of claim 1, wherein said ferrule proximal portion is configured to form an operable mechanical connection with another instrument.

Claims 10-16 (Cancel)

17. (Currently amended) A system comprising:

an optical instrument having an optical connector and a rotatable mechanical connector, and an optical guidewire, said optical guidewire comprising:

an elongated shaft having a longitudinal axis, a diameter and proximal and distal portions having ends, the proximal portion having a substantially constant outer diameter, an optical pathway in the distal portion configured for passing optical radiation, and an internal surface defining an internal chamber within the elongated shaft extending to the passage in the distal end;

an elongated optical fiber extending substantially [[a]] an entire length of the internal chamber of the elongated shaft; and

a ferrule directly connected to said optical fiber and having a distal portion and a proximal portion, the proximal portion having a substantially constant outer diameter being substantially the same as the outer diameter of the shaft proximal portion and configured to have a position in which the ferrule is free to rotate around said longitudinal axis with respect to the elongated shaft, said ferrule being configured to engage said optical connector effective to pass optical radiation between said optical fiber and said optical instrument, said ferrule further configured to engage said rotatable mechanical connector effective that said ferrule rotates when engaged to said mechanical connector while said mechanical connector rotates.

18. (Withdrawn) The system of claim 17, wherein said ferrule is rotatably engaged with said elongated shaft, effective that at least a distal portion of said ferrule is disposed within said internal chamber of said elongated shaft and is free to rotate around said longitudinal axis.

19. (Previously presented) The system of claim 17, wherein said ferrule is releasably engaged with said elongated shaft, wherein said ferrule is configured to be free to rotate around said longitudinal axis with respect to the elongated shaft when said ferrule is retracted from said internal chamber.

Claims 20-21 (Canceled)

Claims 22-30 (Cancel)

31. (Previously presented) The optical instrument of claim 1, wherein the ferrule distal portion is configured to be disposed within the shaft internal chamber.

32. (Previously presented) The optical instrument of claim 1, wherein the proximal portion of the shaft defines a slot.

33. (Previously presented) The optical instrument of claim 17, wherein the ferrule distal portion is configured to be disposed within the shaft internal chamber.

34. (Previously presented) The optical instrument of claim 17, wherein the proximal portion of the shaft defines a slot.

35. (New): An elongated intracorporeal optical instrument, comprising:

a. an elongated shaft having a longitudinal axis and proximal and distal portions having ends, the proximal portion having a substantially constant outer diameter, an optical pathway configured for passing optical radiation, and an internal surface having a proximal portion and defining an internal chamber within the elongated shaft extending to the optical pathway;

b. an elongated optical fiber extending substantially a length of said internal chamber of said elongated shaft;

c. a ferrule directly connected to said optical fiber and having a distal portion with a diameter and an outer surface, a proximal portion with a substantially constant outer diameter and an outer surface, the outer diameter being substantially the same as the outer diameter of the elongated shaft proximal portion, and configured to have a first position in which said ferrule is

secured to the elongated shaft and a second position in which the ferrule is released from the elongated shaft and is free to rotate around said longitudinal axis;

wherein said ferrule diameters are each less than about 0.01 inch.